

Claims

What is claimed is:

1. A chemical drill for removing portions of a target material, comprising:  
an elongated tube formed of a fuel material;  
5 a source of oxidizer;  
a conduit for establishing a controllable flow of oxidizer from said source  
through said tube; and  
a sleeve formed of a material containing chlorine and/or fluorine mounted on  
said tube;  
10 whereby, when said drill is ignited and used to remove portions of a target  
material, the chlorine and/or fluorine in said sleeve material will react chemically with  
the target material to form gaseous reaction products.
2. A chemical drill as set forth in claim 1 wherein said sleeve is mounted on the  
outer surface of said tube.
- 15 3. A chemical drill as set forth in claim 1 and further comprising a plurality of  
wires in said tube.
4. A chemical drill as set forth in claim 1 and further comprising a plurality of rods  
in said tube.
5. A chemical drill as set forth in claim 1 wherein said sleeve material contains  
20 polyvinyl chlorine.
6. A chemical drill as set forth in claim 1 wherein said sleeve material contains  
polytetrafluoroethylene.
7. A chemical drill as set forth in claim 1 wherein said sleeve material contains  
chlorinated polyvinyl chlorine.

8. A chemical drill as set forth in claim 1 wherein tube contains iron.

9. A chemical drill as set forth in claim 1 wherein said target material contains a ferrous alloy.

10. A chemical drill as set forth in claim 1 wherein said target material contains an alloy having an element selected from the group consisting of aluminum, copper, magnesium, titanium, a transition metal, tungsten, nickel, cobalt and chromium.

11. A chemical drill as set forth in claim 1 wherein said target material is selected from the group consisting of concrete, reinforced concrete, aluminum oxide, silicon oxide, calcium oxide, and brick.

12. A chemical drill as set forth in claim 1 wherein said target material includes a ceramic material selected from the group consisting of alumina, silica, zirconia, magnetite, silicon carbide and silicon nitride.